

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. **(Currently amended)** A method for estimating carrier frequency offset in subscriber terminals in TD-SCDMA system, said the method ~~comprise the~~ comprising:

A. determining number of effective base stations with same carrier frequency from which more than one signals are received by a subscriber terminal and main path positions of each signal;

B. combining the signals of ~~each station~~ each base station with same carrier frequency corresponding to said the number of effective base stations with same carrier frequency based on the main path positions obtained in step A;

C. calculating a rough estimation value of the carrier frequency offset based on combined signal in step B.

2. **(Currently amended)** A method as claimed in claim 1, wherein said the determining number of effective base stations with same carrier frequency from which more than one signals are received by a subscriber terminal in step A comprises:

A1. calculating peak power value of each signal received by a the subscriber terminal, and selecting the peak power values of ~~predefined number of base stations~~ predefined maximum number of base stations from higher to lower;

A2. determining the number of effective base stations with same carrier frequency from ~~predefined number of signals~~ the signals determined in step A1 by the predefined maximum number of base stations with same carrier frequency are received by the subscriber terminal by comparing the ratio of the highest peak power value from the order in step A1 to the subsequent peak power values with ~~the~~ a given threshold.

3. **(Currently amended)** A method as claimed in claim 2, wherein said the signals are synchronous downlink pilot signals, and said step A1 further comprises steps:

A11. shift multiple correlating a local synchronous downlink pilot code and a received synchronous downlink pilot signal results resulting in a power value of the synchronous downlink pilot signals received by the subscriber terminal ;

A12. determining peak power values corresponding to each of the synchronous downlink pilot codes.

4. **(Currently amended)** A method as claimed in claim 3, wherein said the method further comprises steps in between step A11 and step A12: selecting the power values of each frame of more than one frames and averaging said the power values of each frame.

5. **(Currently amended)** A method as claimed in claim 2, wherein said-step A2 further comprises :

A21. numbering the peak power values ordered from the highest to the lowest and setting a current sequence number as predefined number of the base stations with same carrier frequency ;

A22. determining whether the highest peak power value and a peak power value corresponding to the current sequence number are greater than the given threshold, if so, setting the number of effective base stations with same carrier frequency from which the signals are received by a subscriber terminal as the value of the current sequence number, otherwise, the current sequence number decreases by one and returns back to step A22.

6. **(Currently amended)** A method as claimed in claim 1, further comprises, before said step A, reading vector data of 128 chips while receiving synchronous downlink pilot signals at the beginning of a downlink pilot time slot.

7. **(Currently amended)** A method as claimed in claim 2, further comprises a step before said step B: multi-path combining signals of each base station with same carrier frequency.

8. **(Currently amended)** A method as claimed in claim 7, wherein ~~said~~ the step of multi-path combining signals of each base station with same carrier frequency comprises steps :

beginning from a point of previously predetermined number of the peak power value,
reading data of synchronous downlink pilot signals at a point which is 2 times of the
~~predetermined~~ a predefined value added length of said the synchronous downlink pilot code;

performing Max Ratio Combination after eliminating phase difference between symbols of
multi-path synchronous downlink pilot signal with different time delay and the phase difference
of delay path.

9. **(Currently amended)** A method as claimed in claim 1, wherein ~~said~~-step B of
incorporating the signals of ~~each station~~ each base station with same carrier frequency
corresponding to the number of base stations with same carrier frequency is: equal gain
combining or ~~weighting~~ weighted combining signals of each base station with same carrier
frequency corresponding to ~~said base station number~~ the number of base stations with same
carrier frequency to obtain an combined signal sequence.

10. **(Currently amended)** A method as claimed in claim 9, wherein ~~said~~ step C is to obtain
a rough estimating value of the carrier frequency offset according to the phase difference
between two symbols spaced by a defined distant in said the combined signal sequence.

11. **(Currently amended)** A method as claimed in claim 10, wherein ~~said~~ step C further
comprises: estimating carrier frequency offset for a predefined times, and then averaging them to
get a carrier frequency offset estimation.

12. **(Currently amended)** A method as claimed in claim 10, wherein ~~said~~ step C is to sum
up the phase differences between two symbols spaced by a defined distant in said the
incorporated signal sequence, and then computing the phase angle to get the carrier frequency
offset estimation.

13. **(Currently amended)** A device for estimating carrier frequency offset in TD-SCDMA
system, said the device ~~comprises~~ comprising:

a decision module for determining ~~base station number~~ the number of base stations with same carrier frequency from which signals are received by a subscriber terminal and a main path position of signal transmitted from each base station with same carrier frequency based on the signals received by a subscriber terminal, and then outputting the number of the effective base station with same carrier frequency and the main path position of each signal to an combining module ;

a ~~combining~~ combining module for combining the signals from each base station with same carrier frequency corresponding to the number of effective base stations with same carrier frequency based on the main path position of signals and then outputting the combined signals to a carrier frequency offset acquiring module;

a carrier frequency offset acquiring module for ~~obtaining~~ calculating a rough estimating value of the carrier frequency offset based on the combined signals.

14. **(Currently amended)** A device as claimed in claim 13, wherein ~~said~~ the device further comprises a multi-path combining module for multi-path combining the signals of each base station with same carrier frequency, and then outputting the multi-path combined signal to the combining module, if ~~the effective base station number~~ the number of effective base stations with same carrier frequency is greater than 1.